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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/784,193	02/24/2004	Yoshiaki Okui	118827	1085

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EXAMINER	
BERHANU, SAMUEL	

ART UNIT	PAPER NUMBER
2838	

MAIL DATE	DELIVERY MODE
06/26/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/784,193

Applicant(s)

OKUI, YOSHIAKI

Examiner

Samuel Berhanu

Art Unit

2838

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 March 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2 and 12-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2 and 12-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

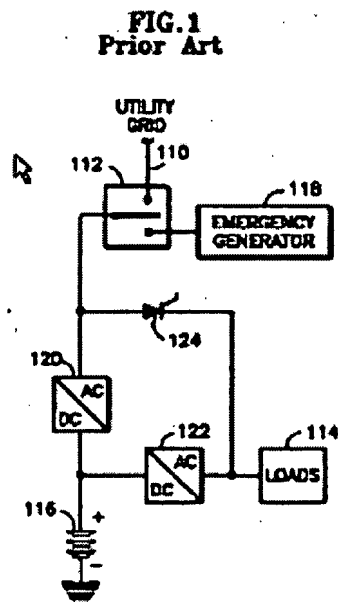
### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 2-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Young et al.** [7061139] in view of **JP-2000341865**.

Young discloses in fig.1 an "on-line, double conversion" type UPS.



Young does not disclose a control circuit for controlling an output voltage of the converter to lower below a steady state, so as to cause the storage battery thus to discharge at a more limited current than the rated current of the storage battery, and so as to cause the converter to supply a part of load current to the load; and a judgment circuit that judges the degradation of the storage battery based on a charging time of the storage battery from a time when the control circuit controls the output voltage of the converter to return to the steady state to a time when the battery is fully charged. F

JP discloses in figures 1-3 and abstract a control circuit CPU and a judgment circuit judges the degradation of the storage battery based on a charging time of the storage battery.

[0010] In another aspect of the uninterruptible power supply device of the present invention comprises; a control circuit for controlling an output voltage of the converter to lower below a steady state, the storage battery thus to discharge at a more limited current than the rated current thereof, and the converter to supply a part of load current to the load; and a judgment circuit judges the degradation of the storage battery based on a charging time of the storage battery from when controlling, by the control circuit, the converter to return the output voltage to the steady state until completing full charge state thereof.

[0020] In the other aspect of the uninterruptible power supply device of the present invention, the degradation judgment circuit comprises a timer for measuring the charge time of the storage battery.

[0021] In the other aspect of the present uninterruptible power supply device, the degradation judgment circuit comprises a timer connecting to a comparator for comparing a charging current of the storage battery with a base current.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Young's apparatus and include a control

Art Unit: 2838

circuit including a timer for judging the degradation of the storage battery based on the charging time in order to minimize the performance degradation of the battery.

As to claims 12-14, see remarks and references above.

As to claim 15, converter is a rectifier and the uninterruptible supply device further comprising a direct-alternating current inverter is connected midway between the storage battery and the load: with regard to the particular location of the inverter, i.e., midway between the storage battery and the load, absent any criticality, is only considered to be an obvious modification as the courts held that there would be no invention in shifting the location of a structure of a device to another location if the operation of the device would not thereby be modified. *In re Japikse*, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950) **MPEP 2144.04**.

As to claims 16-19, see remarks and references above.

3. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Young et al.** and **JP-2000341865**, as described above, in view of **Faria et al.** [6295215].

Young and JP do not disclose PWM.

Faria discloses in an AC power supply at column 10, lines 18-21:

~~also applicable to single-ended transistor configurations~~  
It will also be appreciated that a wide variety of other control circuits may be used with the invention, including, for example, average current mode control circuits using fixed frequency pulse-width modulation (PWM) techniques, as well as non-current mode control circuits that may be operated such that they provide control of current transfer through a DC/AC converter (e.g., inverter) circuit.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Young's and JP's apparatus and include

Art Unit: 2838

PWM, as disclosed by Faria, in order to provide control of current transfer through a DC/AC converter (e.g., inverter) circuit.

***Response to Arguments***

4. Applicant's arguments with respect to the claims have been considered but are not persuasive.

Applicant argues that Chishima does not judge degradation based on a recharge time. This is incorrect.

Chishima discloses estimating battery life or battery degradation based on charging cycle. Not that charging cycle is as a result of charging and discharging time. See also below.

[0010] In another aspect of the uninterruptible power supply device of the present invention comprises; a control circuit for controlling an output voltage of the converter to lower below a steady state, the storage battery thus to discharge at a more limited current than the rated current thereof, and the converter to supply a part of load current to the load; and a judgment circuit judges the degradation of the storage battery based on a charging time of the storage battery from when controlling, by the control circuit, the converter to return the output voltage to the steady state until completing full charge state thereof.

[0020] In the other aspect of the uninterruptible power supply device of the present invention, the degradation judgment circuit comprises a timer for measuring the charge time of the storage battery.

[0021] In the other aspect of the present uninterruptible power supply device, the degradation judgment circuit comprises a timer connecting to a comparator for comparing a charging current of the storage battery with a base current.

**Conclusion**

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

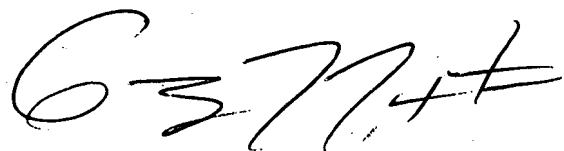
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel Berhanu whose telephone number is 571-272-8430. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Karl Easthom can be reached on 571-272-1989. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SB



GARY L. LAXTON  
PRIMARY EXAMINER

6/22/2007